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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/465,690	12/17/1999	PAUL H. LEAMON	4889:62	9186

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ATTEN: GREGORY W. CARR  
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EXAMINER

BOYCE, ANDRE D

ART UNIT

PAPER NUMBER

3623

DATE MAILED: 09/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/465,690

**Applicant(s)**

LEAMON ET AL.

**Examiner**

Andre Boyce

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-15 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Non-Final office action is in response to Applicant's amendment filed July 11, 2003. Claims 1-3, 11, and 12 have been amended. Claims 1-18 are pending.
2. The previously pending rejection to claims 1-9 under 35 USC § 101 have been withdrawn.

### ***Claim Rejections - 35 USC § 112***

3. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3 are rendered vague and indefinite for use of the term "employee" in the third line of each claim. It is unclear whether "employee" and "agent" refer to the same entity, which the claim language seems to suggest. Appropriate correction is required. Claims 4-9 are also rejected, as depending from either claim 1 or 3.

### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 1, 2, 7-11, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castonguay et al (USPN 5,911,134), in view of Gabriner et al (USPN 5,848,403).

As per claim 1, Castonguay et al disclose a method for assigning a group of agents to a plurality of available schedules (see column 17, lines 65-67), comprising the steps of determining preferences for a plurality of factors for each agent (see column 18, lines 9-11), assigning an order of importance for the plurality of factors for each employee (see column 18, lines 14-18), and determining a difference value for each factor between a plurality of schedules and each agent's preference for that factor (i.e., match between assigned tours and preferences, see column 19, lines 12-16). The match being positive or negative (e.g., Does it match the agent's preference?, yes or no), constitutes a difference value between the preference and the schedule. Castonguay et al also discloses one or more steps performed by an electronic processing device (see figure 4).

Castonguay et al does not explicitly assigning the difference value for each factor to an assigned vector for each agent wherein the factor having the highest importance is assigned to the highest order bits of the vector and the remaining factors assigned to subsequent orders of bits in their assigned order of importance, calculating an unassigned vector for each schedule not assigned to the agent, and assigning the schedule having the lowest vector to each agent.

Gabriner et al discloses soft constraints (i.e., preferences) considered in producing schedules (see column 7, lines 20-22), and the resource bit array 30

includes an ordered set of bits, wherein a predetermined index (i.e., difference value assignment) indicates a resource capability (see column 7, lines 40-45). Gabriner et al also discloses an indexed location in each resource bit array 30 that indicates a qualification that corresponds to a constraint in a task bit array 50 (i.e., unassigned vector). Castonguay and Gabriner are all concerned with effective agent scheduling, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the factor with the highest importance is assigned to the highest order of bits of the vector with the remaining factors assigned accordingly, calculating an unassigned vector for each schedule not assigned to the agent, and assigning the schedule having the lowest vector, in Castonguay et al, as seen in Gabriner. By using this vector assignment system the Castonguay et al method would be able to rapidly and effectively evaluate and assign schedules based strictly upon agent preference, just as the Castonguay et al method already implements for tour coverage (see column 18, lines 33-42).

As per claim 2, Castonguay et al disclose the routine passing through generated tours for each preference supported and trading tours to improve the match between assigned tours and preferences (see column 19, lines 11-14). Castonguay et al does not explicitly disclose unassigned vectors calculated for each agent based on the assigned schedules. Gabriner et al discloses an indexed location in each resource bit array 30 that indicates a qualification that corresponds to a constraint in a task bit array 50 (i.e., unassigned vector), and it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an

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unassigned vectors calculated for each agent based on the assigned schedules in Castonguay et al, using the same motivation as seen in claim 1.

As per claim 7, Castonguay et al disclose the plurality of factors being selected from the group of start times, break times, lunch times, days off, end time, lunch length, split shift parameters, and hours worked (see column 18, lines 14-18).

As per claim 8, Castonguay et al disclose the plurality of schedules being preliminary assigned schedules (see column 18, lines 65-67 and column 19, lines 1-3). Once the initial tour is generated in the Castonguay et al method, the preliminary schedule is complete.

As per claim 9, Castonguay et al disclose the plurality of schedules being a pool of schedules (see column 19, lines 34-35).

Claims 10, 11, 16-18 are rejected based upon the rejection of claims 1, 2, 7-9 respectively, since they are the computer program product claims corresponding to the method claims.

### ***Response to Arguments***

6. In remarks, with respect to claims 1 and 10, Applicant argues Crockett fails to teach or suggest for each factor, determining a difference value between a plurality of schedules and each agent's preference for that factor. The Examiner submits Castonguay et al as disclosing a match between assigned tours and preferences, see column 19, lines 12-16). The match being positive or negative (e.g., Does it

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match the agent's preference?, yes or no), constitutes a difference value between the preference and the schedule.

Applicant also argues that Gabriner fails to teach or suggest assigning the difference value for each factor to an assigned vector for each agent wherein the factor having the highest importance is assigned to the highest order bits of the vector and the remaining factors assigned to subsequent orders of bits in their assigned order of importance, calculating an unassigned vector for each schedule not assigned to the agent, and assigning the schedule having the lowest vector to each agent. The Examiner respectfully disagrees and submits that Gabriner discloses an ordered vector (bit array 30), including rules or requirements that must be satisfied. Soft constraints are rules and preferences that may be used as absolute requirements (see column 7, lines 21-23). As a result, soft constraints may indeed be included in the resource bit array 30. Further, Gabriner et al also discloses an indexed location in each resource bit array 30 that indicates a qualification that corresponds to a constraint in a task bit array 50 (i.e., unassigned vector).

***Allowable Subject Matter***

7. Claim 3 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. Claims 4-6 depend therefrom.

Claims 12-15 are allowable.

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**Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Depledge et al (USPN 5884307) discloses updating a segmented bit-mapped index to reflect a change made to data.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (703) 305-1867. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

adb

  
TARIQ R. HAFIZ  
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